Claims

1. A method for quantitating trigyceride (TG) in a particular lipoprotein which comprises eliminating free glycerol from a sample containing free glycerol and TG in the particular lipoprotein, then allowing the resulting sample to react with lipoprotein lipase (LPL) and an enzyme system which generates hydrogen peroxide from free glycerol, and quantitating the generated hydrogen peroxide.

2. The method for quantitating TG in a particular lipoprotein as claimed in Claim 1, wherein the method for eliminating free glycerol comprises yielding hydrogen peroxide with an enzyme system, which generates hydrogen peroxide from free glycerol, and then eliminating hydrogen peroxide generated.

3. The method for quantitating TG in a particular lipoprotein as claimed in Claim 2, wherein the generated hydrogen peroxide is quantitated in the presence of a reagent which inhibits the reaction of lipoproteins other than the particular lipoprotein.

4. The method for quantitating TG in a particular lipoprotein as claimed in Claim 3, wherein the reagent that inhibits the reaction of lipoproteins other than the particular one includes a surfactant which inhibits the reaction of lipoproteins other than the particular one and/or an

aggregating agent for lipoproteins other than the particular one.

5. The method for quantitating TG in a particular lipoprotein as claimed in Claim 4, wherein the particular lipoprotein is high density lipoprotein (HDL), and the surfactant which inhibits the reaction of lipoproteins other than the particular one is a polyoxyethylene glycol derivative which is a low foaming wetting penetrant.

6. The method for quantitating TG in a particular lipoprotein as claimed in Claim 4, wherein the particular lipoprotein is high density lipoprotein (HDL), and the aggregating agent for lipoproteins other than the particular one is a combination of polyanion and bivalent metal salt.

7. The method for quantitating TG in a particular lipoprotein as claimed in Claim 2, wherein the surfactant and/or enzyme that allows the reaction of the particular lipoprotein is added after elimination of free glycerol.

8. The method for quantitating TG in a particular lipoprotein as claimed in Claim 1, wherein the TGs in lipoproteins other than the particular one are also eliminated during the elimination of free glycerol.

9. The method for quantitating TG in a particular lipoprotein as claimed in Claim 8, wherein the method for eliminating free glycerol and TGs in lipoproteins other than the particular one comprises generating hydrogen peroxide in

the presence of a reagent which allows the reaction of lipoproteins other than the particular one using LPL and an enzyme system which generates hydrogen peroxide from free glycerol, and then eliminating hydrogen peroxide generated.

10. The method for quantitating TG in a particular lipoprotein as claimed in Claim 9, wherein the reagent allowing the reaction of lipoproteins other than the particular one is a surfactant which allows the reaction of lipoproteins other than the particular one and/or a aggregating agent for the particular lipoprotein.

11. The method for quantitating TG in a particular lipoprotein as claimed in Claim 10, wherein the surfactant and/or the enzyme that allows the reaction of the particular lipoprotein is added after elimination of free glycerol and TGs in lipoproteins other than the particular one.

12. The method for quantitating TG in a particular lipoprotein as claimed in Claim 10 or 11, wherein the particular lipoprotein is low density lipoprotein (LDL), and the surfactant allowing the reaction of lipoproteins other than the particular one used in elimination of hydrogen peroxide is polyoxyethylene glycol alkyl phenyl ether (HLB 15 or higher) or a polyoxyethylene glycol derivative which is a low foaming wetting penetrant.

13. The method for quantitating TG in a particular lipoprotein as claimed in ~~any one of~~ Claims ~~1 to~~ 12, wherein

the enzyme system that generates hydrogen peroxide from free glycerol is a system containing glycerol kinase (GK) and glycerol 3-phosphate oxidase (GPO).

14. The method for quantitating TG in a particular lipoprotein as claimed in ~~any one of~~ Claims ~~1 to~~ 12, wherein the enzyme system that generates hydrogen peroxide from free glycerol is a system containing glycerol oxidase (GO).

15. The method for quantitating TG in a particular lipoprotein as claimed in ~~any one of~~ Claims ~~1 to 14~~ 12, wherein the method for quantitating hydrogen peroxide comprises allowing hydrogen peroxide to react with peroxidase (POD) and a chromogen to yield a pigment, and quantitating the pigment as absorbance.

16. The method for quantitating TG in a particular lipoprotein as claimed in Claim 15, wherein the chromogen is a combination of 4-aminoantipyrine and Trinder reagent.

17. The method for quantitating TG in a particular lipoprotein as claimed in ~~any one of~~ Claims ~~1 to 16~~ 12, wherein the method for eliminating hydrogen peroxide comprises allowing hydrogen peroxide to react with POD and a chromogen to yield a pigment, and eliminating the pigment enzymatically.

18. The method for quantitating TG in a particular lipoprotein as claimed in ~~any one of~~ Claims ~~1 to 17~~ 12, wherein the sample containing TGs in lipoproteins is a serum or plasma sample.

19. A reagent for quantitating TG in a particular lipoprotein containing a reagent for inhibiting the reaction of lipoproteins other than the particular one, LPL, GK, GPO and POD.

20. A reagent for quantitating TG in a particular lipoprotein containing a reagent for inhibiting the reaction of lipoproteins other than the particular one, LPL, GO and POD.

21. A reagent for quantitating TG in a particular lipoprotein containing a reagent for allowing the reaction of lipoproteins other than the particular one, LPL, GK, GPO and POD.

22. A reagent for quantitating TG in a particular lipoprotein containing a reagent for allowing the reaction of lipoproteins other than the particular one, LPL, GO and POD.

23. The reagent for quantitating TG in a particular lipoprotein as claimed in Claim 21 or 22, which contains a surfactant and/or an enzyme that allows the reaction of the particular lipoprotein.

24. A reagent for quantitating TG in a particular lipoprotein containing a reagent for inhibiting the reaction of lipoproteins other than the particular one or a reagent for allowing the reaction of lipoproteins other than the particular one in the final reaction mixture, LPL, GK, GPO and POD.

25. A reagent for quantitating TG in a particular lipoprotein containing a reagent for inhibiting the reaction

of lipoproteins other than the particular one or a reagent for allowing the reaction of lipoproteins other than the particular one in the final reaction mixture, LPL, GO and POD.